TCEQ Interoffice Memorandum

To: Tony Walker

Director, TCEQ Region 4, Dallas/Fort Worth

Alyssa Taylor

Special Assistant to the Regional Director, TCEQ Region 4, Dallas/Fort Worth

From: Shannon Ethridge, M.S., D.A.B.T. S.E.

Toxicology Division, Office of the Executive Director

Date: February 18, 2014

Subject: Toxicological Evaluation of Results from an Ambient Air Sample for Volatile

Organic Compounds Collected Downwind of the XTO Energy - Eden SW Unit (Latitude 32.633795, Longitude -97.113008) in Arlington, Tarrant County, Texas

Sample Collected on January 7, 2014, Request Number 1401019 (Lab Sample

1401019-001)

Key Points

• Reported concentrations of target volatile organic compounds (VOCs) were either not detected or were detected below levels of short-term health and/or welfare concern.

Background

On January 7, 2014, a Texas Commission on Environmental Quality (TCEQ) Region 4 air investigator collected a 30-minute canister sample (Lab Sample 1401019-001) downwind of the XTO Energy - Eden SW Unit (Latitude 32.633795, Longitude -97.113008) in Arlington, Tarrant County, Texas. The investigator experienced a natural gas odor but no health effects while sampling. Meteorological conditions measured at the site or nearest stationary ambient air monitoring site indicated that the ambient temperature was 38°F with a relative humidity of 26%, and winds were from the south (180°) at 1.2 to 6 miles per hour. The sampling site was less than 100 feet from the possible source. The nearest location where the public could have access was from 101 to 300 feet from the possible emission source. The sample was sent to the TCEQ laboratory in Austin, Texas, and analyzed for a range of VOCs. The list of the target analytes that were evaluated in this review are provided in Attachment A. The VOC concentrations were reported in parts per billion by volume (ppbv) (Attachment B and Table 1). Please note that the available canister technology and analysis method cannot capture and/or analyze for all chemicals.

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Results and Evaluation

Reported VOC concentrations were compared to TCEQ's short-term health- and/or welfare-based air monitoring comparison values (AMCVs) (Table 1). Short-term AMCVs are guidelines used to evaluate ambient concentrations of a chemical in air and to determine its potential to result in adverse health effects, adverse vegetative effects, or odors. Health AMCVs are set to provide a margin of safety and are set well below levels at which adverse health effects are reported in the scientific literature. If a chemical concentration in ambient air is less than its comparison value, no adverse health effects are expected to occur. If a chemical concentration exceeds its comparison value it does not necessarily mean that adverse effects will occur, but rather that further evaluation is warranted.

All of the 84 VOCs were either not detected or were detected below their respective short-term AMCVs. Exposure to levels of VOCs measured in this sample would not be expected to cause short-term adverse health effects, adverse vegetative effects, or odors.

Please call me at (512) 239-1822 if you have any questions regarding this evaluation.

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Attachment A

List of Target Analytes for Canister Samples

ethane ethylene acetylene propane propylene dichlorodifluoromethane methyl chloride isobutane vinyl chloride 1-butene 1.3-butadiene n-butane t-2-butene bromomethane c-2-butene 3-methyl-1-butene

isopentane

trichlorofluoromethane

1-pentene n-pentane isoprene t-2-pentene

1,1-dichloroethylene

c-2-pentene

methylene chloride 2-methyl-2-butene 2,2-dimethylbutane cyclopentene

4-methyl-1-pentene 1.1-dichloroethane cyclopentane 2,3-dimethylbutane 2-methylpentane 3-methylpentane

2-methyl-1-pentene + 1-hexene

n-hexane chloroform t-2-hexene c-2-hexene

1,2-dichloroethane methylcyclopentane 2,4-dimethylpentane 1,1,1-trichloroethane

benzene

carbon tetrachloride

cyclohexane 2-methylhexane 2,3-dimethylpentane 3-methylhexane 1,2-dichloropropane trichloroethylene 2,2,4-trimethylpentane

2-chloropentane

n-heptane

c-1,3-dichloropropylene methylcyclohexane

t-1,3-dichloropropylene 1.1.2-trichloroethane 2,3,4-trimethylpentane toluene

2-methylheptane 3-methylheptane 1.2-dibromoethane

n-octane

tetrachloroethylene chlorobenzene ethylbenzene m & p-xylene styrene

1,1,2,2-tetrachloroethane

o-xylene n-nonane

isopropylbenzene n-propylbenzene m-ethyltoluene p-ethyltoluene

1,3,5-trimethylbenzene

o-ethyltoluene

1,2,4-trimethylbenzene

n-decane

1,2,3-trimethylbenzene m-diethylbenzene p-diethylbenzene n-undecane

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Attachment B

1/30/2014

Texas Commission on Environmental Quality

Laboratory and Quality Assurance Section P.O. Box 13087, MC-165 Austin, Texas 78711-3087 (512) 239-1716

Laboratory Analysis Results Request Number: 1401019

Request Lead:	Reg	gion: T04 Da	te Received: 1/15/2014	
Project(s): Barnett Shale				
Facility(ies) Sampled	City	County	Facility Type	
XTO Energy - Eden SW Unit	Arlington	Tarrent		
Sample(s) Received	-			
Field ID Number: 00249-010714 Sampling Site:	Laboratory Sample Nun		Sampled by: Aaron T. I I/07/14 13:53:00 Valid San	
Comments: Canister 00249 was used to			1/07/14 15:55:00 Valid San	ipie: re
Requested Laboratory Procedure	e(s):			

Analysis: AP001VOC

Determination of VOC Canisters by GC/MS Using Modified Method TO-15

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on the analytical procedures please contact the laboratory manager at (512) 239-1716. For an update on the health effects evaluation of these data, please contact the Toxicology Division at (512) 239-1795.

Analyst: Date: 01/30/14

Laboratory Manager: Ken Jancaste Date: 2/4/14

Laboratory Analysis Results

Request Number: 1401019 Analysis Code: AP001VOC

Note: Results are reported in uni	ts of ppbv									
Lab ID				019-001						
Field ID	-		0024	9-010714						
Canister ID			0	0249						
Compound	Conc.	SDL	SQL	Analysis Date	Plags**	Conc.	SDL	SQL	Analysis Date	Flags**
ethane	2500	16	39	1/27/2014	T,D2					
othylene	0.82	1.0	2.4	1/18/2014	J,T,D1				i i	
oetylene .	0.39	1.0	2.4	1/18/2014	J,T,D1	1				
propane	100	1.6	2.4	1/18/2014	T,D1					
propylene	ND	1.0	2.4	1/18/2014	T,D1	i			-	
dichloredifluoremethane	0.53	0.40	1.2	1/18/2014	L,D1					
methyl chloride	0.69	0.40	1,2	1/18/2014	L,D1			İ		
isobutane	3.2	0.46	- 2.4	1/18/2014	Di	1				
vinyl chloride	ND	0.34	1.2	1/18/2014	DI	1			1	
-butene	0.17	0.40	1,2	1/18/2014	J,D1	<u> </u>		 		
1,3-butadiene	ND	0.54	1.2	1/18/2014	DI	1				
n-butane	7.2	0.40	2.4	1/18/2014	DI	i		i		
-2-butene	ND	0.36	1.2	1/18/2014	DI	i				
promomethane	ND	0.54	1.2	1/18/2014	DI	1		1		
2-2-butene	ND	0.54	1.2	1/18/2014	DI					
3-methyl-1-butene	ND	0.46	1,2	1/18/2014	DI	i			i i	
isopentane	0.65	0.54	4.8	1/18/2014	L,D1	<u> </u>			i i	
richlorofluoromethane	0.26	0.58	1,2	1/18/2014	J,D1	- 			l	
I-pentene	ND	0.54	1.2	1/18/2014	DI	+		_	<u> </u>	
r-pentane	0.47	0.54	4.8	1/18/2014	J,DI			-		
isoprene	ND	0.54	1,2	1/18/2014	DI	1			l	
-2-pentene	0.01	0.54	2.4	1/18/2014	J,D1	1				
1,1-dichloroethylene	0.01	0.36	1.2	1/18/2014	J,D1	+			<u> </u>	
c-2-pentene	ND	0.50	2.4	1/18/2014	D1	1				
methylene chloride	0.07	0.28	1.2	1/18/2014	J,D1	+				
2-methyl-2-butene	ND	0.46	1.2	1/18/2014	DI					
2,2-dimethylbutane	ND	0.42	1,2	1/18/2014	DI	1	l			
cyclopentene	ND	0.40	1,2	1/18/2014	DI	<u> </u>		_		
4-methyl-1-pentene	ND	0.44	2.4	1/18/2014	DI			 	 	
I, I -diehloroethane	ND	0.38	1.2	1/18/2014	DI	+				
cyclopentane	ND	0.54	1.2	1/18/2014	DI	+			-	
2,3-dimethylbutane	ND	0.56	2.4	1/18/2014	DI			-		
2-methylpentane	0.09	0.54	1.2	1/18/2014	J,DI		l			
3-methylpentane	0.07	0.46	1.2	1/18/2014	J,DI	1				
2-methyl-1-pentene + 1-hexene	ND	0.40	4.8	1/18/2014	DI	1			-	
1-hexane	0.10	0.40	2.4	1/18/2014	J,DI	+		 		
chloroform	0.02	0.42	1.2	1/18/2014	J,D1				-	
-2-hexene	ND	0.54	2.4	1/18/2014	DI	+		-	-	
-2-hexene	ND	0.54	2.4	1/18/2014	D1	+		l		
2-dichloroothane	ND	0.54	1.2	1/18/2014	DI	1		 		
nethyleyelopentane	0.04	0.54	2.4	1/18/2014	J,DI	+	-	-		
.4-dimethylpentane	ND	0.54	2.4	1/18/2014	DI			}		
,1,1-trichloroethane	ND.	0.52	1.2	1/18/2014	DI	-	ļ	-	-	
	0.55	0.54	1.2	1/18/2014	L,D1	-				
enzene arbon (strachloride	0.10	0.54	1.2	1/18/2014	J,DI			-		
			1.2	1/18/2014	J,DI				-	
cyclohexane	0.30	0.48	1.2		DI	+	L	ļ		
-methythexane 2,3-dimethylpentane	ND ND	0.54	1.2	1/18/2014	DI			ļ		

· Laboratory Analysis Results Request Number: 1401019 Analysis Code: AP001VOC

Note: Results are reported in units of proby

2-nethythexane	Lab ID		1401019-001								
1,2-dichlieropripane	Compound	Cons.	SDL	SQL		Flags**	Conc.	SDL	SQL		Flags**
Architecthylene	3-methylhexane	0.03	0.40	1,2	1/18/2014	J,DI					
2.2.4-trimethylpentane	1,2-dichloropropane	ND	0.34	1.2	1/18/2014	D1	Ť		1		
2-chloropeotane	trichloraethylene	ND	0.58	1,2	1/18/2014	DI				i	
Color	2,2,4-trimethylpentage	ND	0.48	1.2	1/18/2014	DI					
Col.	2-chloropentane	ND	0.54	1.2	1/18/2014	Dţ	ī		i		
Internative Color n-hoptane	0.04	0.50	2.4	1/18/2014	J,D1				i		
Fig. 2-dichloropropylene ND 0.40 1.2 1/18/2014 D1 D1 D1 D1 D1 D1 D1	c-1,3-dichloropropylene	ND	0.40	1.2	1/18/2014	D1	1		i		
1,1,2-trichloroethane	methylcyclohexane	0.10	0.52	2.4	1/18/2014	J,D1					
ND 0.48 2.4 1/18/2014 D1 D1 D1 D1 D1 D1 D1	t-1,3-dichloropropylene	ND	0,40	1,2	1/18/2014	DÍ	Ī				
Columbia 1,1,2-trichloroethnne	ND	0.42	1.2	1/18/2014	DI						
2-methytheptane ND 0.40 2.4 1/18/2014 D1 3-methytheptane ND 0.46 2.4 1/18/2014 D1 1 1,2-dibromoethane ND 0.46 2.4 1/18/2014 D1 1 1,2-dibromoethane ND 0.49 1.2 1/18/2014 D1 1 1 1/18/2014 D1 1 1 1/18/2014 D1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2,3,4-trimethylpentane	ND	0.48	2.4	1/18/2014	DI					
3-methylheptane	toluene	0,21	0.54	1,2	1/18/2014	J,DL				i i	
1,2-dibromoethane	2-methylheptane	ND	0.40	2.4	1/[8/2014	D1					
No. 3-methylheptane	ND	0.46	2,4	1/18/2014	DI .						
International Content Inte	1,2-dibromoethane	ND	0.40	1.2	1/18/2014	DI	İ				
Chlorobenzene	n-octane	0.02	0.38	2.4	1/18/2014	J,D1	1				
thylbenzene ND 0.54 2.4 1/18/2014 D1	tetrechloroethylene	ND	0.48	1.2	1/18/2014	DI	T				
m & p-xylene	chlorobenzene	ND	0.54	1.2	1/18/2014	D1	i				
styrene 0.01 0.54 2.4 1/18/2014 1,D1	ethylbenzene	ND	0.54	2.4	1/18/2014	D1	İ				
I, I, 2, 2-tetrach loroethane	m & p-xylene	0.07	0.54	4.8	1/18/2014	J,D1					
ND 0.54 2.4 1/18/2014 D1	styrene	0.01	0.54	2.4	1/18/2014	1,D1					
ND 0,44 1.2 1/18/2014 D1	1,1,2,2-tetrachloroethane	ND	0.40	1.2	1/18/2014	D1	i				
Suppropylbenzene	n-xylene	ND	0.54	2,4	1/18/2014	DI					
### 1.0	n-nonane	ND	0.44	1.2	1718/2014	D1					
m-ethyltoluene ND 0.22 1.2 1/18/2014 DI	isopropylbenzene	ND	0,48	1,2	1/18/2014	D1					
Description Description	n-propylbenzene	ND	0.54	1.2	1/18/2014	D1					
3,5-primethylbenzene ND 0.50 2.4 1/18/2014 D1 D1 -ethyltotuene ND 0.26 2.4 1/18/2014 D1 -ethyltotuene ND 0.54 1.2 1/18/2014 D1 -etecane ND 0.54 1.2 1/18/2014 D1 -etecane 0.02 0.54 2.4 1/18/2014 Jp1 -ethyltotuene ND 0.54 1.2 1/18/2014 D1 -ethyltotuene ND 0.54 2.4 1/18/2014 D1 -ethyltotuene ND 0.54 1.2 1/18/2014 D1	n-ethyltoluene	ND	0,22	1.2	1/18/2014	DI					
Description Description	p-ethylteluene	ND	0.32	2.4	1/18/2014	Di					
1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	ND	0.50	2.4	1/18/2014	DI					
n-decane 0.02 0.54 2.4 1/18/2014 J.D1	n-ethyltolnene	ND	0.26	2.4	1/18/2014	DI					
,2,3-trimethylbenzene	1,2,4-trimethylbenzene	ND	0.54	1.2	1/18/2014	D1	1				
m-diethylhenzene ND 0.54 2.4 1/18/2014 D1 D1 D-diethylbenzene ND 0.54 1.2 1/18/2014 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1	n-decane	0.02	0.54	2.4	1/18/2014	J,D1		-			
o-diothylbenzene ND 0.54 1.2 1/18/2014 D1	1,2,3-trimethylbenzene	ND	0.54	1.2	1/18/2014	DI	1				
	m-diethylbenzene	ND-	0.54	2.4	1/18/2014	DI	·-				
	p-diothy/benzene	ND	0.54	1.2	1/18/2014	DI	i				
	n-undecane	80.0	0.54	2.4	1/18/2014	J,D1	1				

Laboratory Analysis Results Request Number: 1401019 Analysis Code: AP001VOC

Qualifier Notes:

- ND not detected NQ concentration can not be quantified due to possible interferences or coclutions.
- SDL Sample Detection Limit (Limit of Detection adjusted for dilutions).
- SQL Sample Quantitation Limit (Limit of Quantitation adjusted for dilution) INV Invalid.
- J Reported concentration is below SDL.
- L. Reported concentration is at or above the SDL and is below the lower limit of quantitation.
- E Reported concentration exceeds the upper limit of instrument calibration.
- M Result modified from previous result.
- T- Data was not confirmed by a confirmational analysis, Compound and/or results is tentatively identified.
 F Established acceptance criteria was not met due to factors outside the laboratory's control.
- H Not all associated hold time specifications were net. Data may be biased.
- C Sample received with a missing or broken custody seal.
- R Sample received with a missing or incomplete chain of custody.
 1 Sample received without a legible unique identifier.
- O Sample received in an improper container.
- U Sample received with insufficient sample volume.
- W Sample receyied with insufficient preservation.

Quality control notes for AP001VOC samples.

- D1-Sample concentration was calculated using a dilution factor of 4.
- D2-Sample concentration was calculated using a dilution factor of 64,86,

TCEQ laboratory customer support may be reached at Ken.Lancaster@tceq.texas.gov

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Table 1. Comparison of Monitored Concentrations in Lab Sample 1401019-001 to TCEQ Short-Term AMCVs

Lab Sample ID	1401019-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
1,1,1-Trichloroethane	380,000	1,700	1.2	ND	D1	0.52
1,1,2,2-Tetrachloroethane	7,300	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	Not Available	100	1.2	ND	D1	0.42
1,1-Dichloroethane	Not Available	1,000	1.2	ND	D1	0.38
1,1-Dichloroethylene	Not Available	180	1.2	0.01	J,D1	0.36
1,2,3-Trimethylbenzene	Not Available	250	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	140	250	1.2	ND	D1	0.54
1,2-Dibromoethane	Not Available	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	6,000	40	1.2	ND	D1	0.54
1,2-Dichloropropane	250	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	Not Available	250	2.4	ND	D1	0.5
1,3-Butadiene	230	1,700	1.2	ND	D1	0.54
1-Butene	360	50,000	1.2	0.17	J,D1	0.4
1-Pentene	100	2,600	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	670	750	1.2	ND	D1	0.48
2,2-Dimethylbutane (Neohexane)	Not Available	1,000	1.2	ND	D1	0.42
2,3,4-Trimethylpentane	Not Available	750	2.4	ND	D1	0.48
2,3-Dimethylbutane	420	990	2.4	ND	D1	0.56
2,3-Dimethylpentane	4,500	850	1.2	ND	D1	0.52
2,4-Dimethylpentane	940	850	2.4	ND	D1	0.54
2-Chloropentane (as chloroethane)	Not Available	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	140	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	Not Available	2,600	1.2	ND	D1	0.46
2-Methylheptane	110	750	2.4	ND	D1	0.4

Lab Sample ID	1401019-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
2-Methylhexane	420	750	1.2	ND	D1	0.54
2-Methylpentane (Isohexane)	7,000	850	1.2	0.09	J,D1	0.54
3-Methyl-1-Butene	250	8,000	1.2	ND	D1	0.46
3-Methylheptane	1,500	750	2.4	ND	D1	0.46
3-Methylhexane	840	750	1.2	0.03	J,D1	0.4
3-Methylpentane	8,900	1,000	1.2	0.07	J,D1	0.46
4-Methyl-1-Pentene (as hexene)	140	500	2.4	ND	D1	0.44
Acetylene	Not Available	25,000	2.4	0.39	J,T,D1	1
Benzene	2,700	180	1.2	0.55	L,D1	0.54
Bromomethane (methyl bromide)	Not Available	30	1.2	ND	D1	0.54
c-1,3-Dichloropropylene	Not Available	10	1.2	ND	D1	0.4
c-2-Butene	2,100	15,000	1.2	ND	D1	0.54
c-2-Hexene	140	500	2.4	ND	D1	0.54
c-2-Pentene	Not Available	2,600	2.4	ND	D1	0.5
Carbon Tetrachloride	4,600	20	1.2	0.1	J,D1	0.54
Chlorobenzene (phenyl chloride)	1,300	100	1.2	ND	D1	0.54
Chloroform (trichloromethane)	3,800	20	1.2	0.02	J,D1	0.42
Cyclohexane	2,500	1,000	1.2	0.3	J,D1	0.48
Cyclopentane	Not Available	1,200	1.2	ND	D1	0.54
Cyclopentene	Not Available	2,900	1.2	ND	D1	0.4
Dichlorodifluoromethane	Not Available	10,000	1.2	0.53	L,D1	0.4
Ethane	Not Available	Simple Asphyxiant*	39	2500	T,D2	16
Ethylbenzene	170	20,000	2.4	ND	D1	0.54
Ethylene	270,000	500,000	2.4	0.82	J,T,D1	1
Isobutane	Not Available	33,000	2.4	3.2	D1	0.46
Isopentane (2-methylbutane)	1,300	68,000	4.8	0.65	L,D1	0.54

Lab Sample ID	1401019-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
Isoprene	48	20	1.2	ND	D1	0.54
Isopropylbenzene (cumene)	48	500	1.2	ND	D1	0.48
m & p-Xylene (as mixed isomers)	80	1,700	4.8	0.07	J,D1	0.54
m-Diethylbenzene	70	460	2.4	ND	D1	0.54
Methyl Chloride (chloromethane)	Not Available	500	1.2	0.69	L,D1	0.4
Methylcyclohexane	150	4,000	2.4	0.1	J,D1	0.52
Methylcyclopentane	1,700	750	2.4	0.04	J,D1	0.54
Methylene Chloride (dichloromethane)	160,000	3,500	1.2	0.07	J,D1	0.28
m-Ethyltoluene	18	250	1.2	ND	D1	0.22
n-Butane	1,200,000	92,000	2.4	7.2	D1	0.4
n-Decane	620	1,750	2.4	0.02	J,D1	0.54
n-Heptane	670	850	2.4	0.04	J,D1	0.5
n-Hexane	1,500	1,800	2.4	0.1	J,D1	0.4
n-Nonane	Not Available	2,000	1.2	ND	D1	0.44
n-Octane	1,700	750	2.4	0.02	J,D1	0.38
n-Pentane	1,400	68,000	4.8	0.47	J,D1	0.54
n-Propylbenzene	48	500	1.2	ND	D1	0.54
n-Undecane	870	550	2.4	0.08	J,D1	0.54
o-Ethyltoluene	74	250	2.4	ND	D1	0.26
o-Xylene	380	1,700	2.4	ND	D1	0.54
p-Diethylbenzene	70	460	1.2	ND	D1	0.54
p-Ethyltoluene	8.1	250	2.4	ND	D1	0.32
Propane	1,500,000	Simple Asphyxiant*	2.4	100	T,D1	1
Propylene	13,000	Simple Asphyxiant*	2.4	ND	T,D1	1
Styrene	25	5,100	2.4	0.01	J,D1	0.54
t-1,3-Dichloropropylene	Not Available	10	1.2	ND	D1	0.4

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Lab Sample ID	1401019-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
t-2-Butene	2,100	15,000	1.2	ND	D1	0.36
t-2-Hexene	140	500	2.4	ND	D1	0.54
t-2-Pentene	Not Available	2,600	2.4	0.01	J,D1	0.54
Tetrachloroethylene	770	1,000	1.2	ND	D1	0.48
Toluene	920	4,000	1.2	0.21	J,D1	0.54
Trichloroethylene	3,900	100	1.2	ND	D1	0.58
Trichlorofluoromethane	5,000	5,000	1.2	0.26	J,D1	0.58
Vinyl Chloride	Not Available	26,000	1.2	ND	D1	0.34

^{*}A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations. ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL – Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

- J Reported concentration is below SDL.
- L Reported concentration is at or above the SDL and is below the lower limit of quantitation.
- E Reported concentration exceeds the upper limit of instrument calibration.
- M Result modified from previous result.
- T Data was not confirmed by a confirmational analysis. Data is tentatively identified.
- F Established acceptance criteria were not met due to factors outside the laboratory's control.
- H Not all associated hold time specifications were met. Data may be biased.
- C Sample received with a missing or broken custody seal.
- R Sample received with a missing or incomplete chain of custody.
- I Sample received without a legible unique identifier.
- G Sample received in an improper container.
- U Sample received with insufficient sample volume.

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- W Sample received with insufficient preservation.
- D1 Sample concentration was calculated using a dilution factor of 4.
- D2 Sample concentration was calculated using a dilution factor of 64.86.

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Table 2. TCEQ Long-Term Air Monitoring Comparison Values (AMCVs)

Please Note: The long-term AMCVs are provided for informational purposes only because it is scientifically inappropriate to compare short-term monitored values to the long-term AMCV.

Compound Long-Term Health AMCV (ppb _v)		Compound	Long-Term Health AMCV (ppb _v)	
1,1,1-Trichloroethane	940	Cyclopentane	120	
1,1,2,2-Tetrachloroethane	1	Cyclopentene	290	
1,1,2-Trichloroethane	10	Dichlorodifluoromethane	1,000	
1,1-Dichloroethane	100	Ethane	Simple Asphyxiant*	
1,1-Dichloroethylene	86	Ethylbenzene	450	
1,2,3-Trimethylbenzene	25	Ethylene**	5,300	
1,2,4-Trimethylbenzene	25	Isobutane	2,400	
1,2-Dibromoethane	0.05	Isopentane (2-methylbutane)	8,000	
1,2-Dichloroethane	1	Isoprene	2	
1,2-Dichloropropane	10	Isopropylbenzene (cumene)	50	
1,3,5-Trimethylbenzene	25	m & p-Xylene (as mixed isomers)	140	
1,3-Butadiene	9.1	m-Diethylbenzene	46	
1-Butene	Not Available	Methyl Chloride (chloromethane)	50	
1-Pentene	Not Available	Methylcyclohexane	400	
2,2,4-Trimethylpentane	75	Methylcyclopentane	75	
2,2-Dimethylbutane (Neohexane)	100	Methylene Chloride (dichloromethane)	100	
2,3,4-Trimethylpentane	75	m-Ethyltoluene	25	
2,3-Dimethylbutane	99	n-Butane	2,400	
2,3-Dimethylpentane	85	n-Decane	175	
2,4-Dimethylpentane	85	n-Heptane	85	
2-Chloropentane (as chloroethane)	24	n-Hexane	190	
2-Methyl-1-Pentene +1-Hexene	50	n-Nonane	200	

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Compound	Long-Term Health AMCV (ppb _v)	Compound	Long-Term Health AMCV (ppb _v)
2-Methyl-2-Butene	Not Available	n-Octane	75
2-Methylheptane	75	n-Pentane	8,000
2-Methylhexane	75	n-Propylbenzene	50
2-Methylpentane (Isohexane)	85	n-Undecane	55
3-Methyl-1-Butene	800	o-Ethyltoluene	25
3-Methylheptane	75	o-Xylene	140
3-Methylhexane	75	p-Diethylbenzene	46
3-Methylpentane	100	p-Ethyltoluene	25
4-Methyl-1-Pentene (as hexene)	50	Propane	Simple Asphyxiant*
Acetylene	2,500	Propylene	Simple Asphyxiant*
Benzene	1.4	Styrene	110
Bromomethane (methyl bromide)	3	t-1,3-Dichloropropylene	1
c-1,3-Dichloropropylene	1	t-2-Butene	Not Available
c-2-Butene	Not Available	t-2-Hexene	50
c-2-Hexene	50	t-2-Pentene	Not Available
c-2-Pentene	Not Available	Tetrachloroethylene***	3.8
Carbon Tetrachloride	2	Toluene	1,100
Chlorobenzene (phenyl chloride)	10	Trichloroethylene	10
Chloroform (trichloromethane)	2	Trichlorofluoromethane	500
Cyclohexane	100	Vinyl Chloride	0.45

^{*}A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

^{**}Long-term vegetation AMCV for Ethylene is 30 ppb.

^{***}Long-term vegetation AMCV for Tetrachloroethylene is 12 ppb.